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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,813	10/30/2003	Chang-Ho Liou	LIOU3010/EM	6894

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EXAMINER	
MOON, SEOKYUN	
ART UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
05/28/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/695,813	LIOU ET AL.	
	Examiner	Art Unit	
	SEOKYUN MOON	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4,7 and 9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,7 and 9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. The Applicant's arguments filed on January 25, 2008 have been fully considered.

The Applicant [Remark: pg 6, 2nd paragraph] pointed out, "*According to the invention, no storing process is executed during generation of the three Gamma reference voltages. As a result, no storage device, such as a register for storing the encoded data, is required*". However, the Examiner respectfully submits that regardless of whether the instant invention requires a storage device or not, or executes a storing process during generation of the three gamma reference voltages or not, such limitations are not presented in the claim.

The Applicant [Remark: pg 7, 1st paragraph] argued, "*the gamma register 100 stores the digital gamma data. Therefore, the gamma register 100 does not sample/latch the encoded data (gamma data) during the generation of the reference voltages (gamma reference voltages). As a result, the reference voltage generator of the present invention is different from the data drivers of the Lee patent*". The Examiner respectfully disagrees. The Examiner respectfully submits that a register is a latching circuit. Thus, in the driving circuit of Lee, the gamma register 100 does latch the gamma data received from the timing controller during the generation of the gamma reference voltages. Also, in the previous Office action, the Examiner did not construe the data driver of Lee as a voltage generator. As explained in the previous Office action, the Examiner construed a combination of "*gamma register 100*" and "*gamma reference voltage generator 200*" as a reference voltage generator and construed "*a driving unit 10*" as a data driver. Furthermore, the Examiner respectfully submits that construing the data driver of Lee as a reference voltage generator or not does not determine whether the gamma register 100 samples/latches the encoded data or not.

The Applicant [Remark: pg 7, 2nd paragraph] further pointed out, "*the coding unit of the present invention is not a timing controller since the coding unit of the present application generates a plurality of encoded data according to a plurality of characteristic curves*". The coding unit of the present invention might not be a timing controller. However, the Examiner respectfully submits that the timing controller of Lee is a coding unit since the timing controller of Lee generates a plurality of encoded data according to a plurality of characteristic curves. Furthermore, the Examiner respectfully submits that having a function of generating a plurality of encoded data according to a plurality of characteristic curves cannot be a criteria of determining if a device having the function is a timing controller or not.

For the foregoing reasons, the Examiner respectfully submits that the Applicant's arguments are not persuasive.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1**, **4**, and **7** are rejected under 35 U.S.C. 102(e) as being anticipated by Lee (US 2003/0085859).

As to **claim 1**, Lee teaches a driving circuit [fig. 1] for solving color dispersion [par. (0008) lines 1-3; generating separate sets of gamma reference voltages for respective R, G, and B colors prevents color dispersion], implemented in a flat panel display ("*LCD*") [par. (0008) lines 1-3] with a plurality of pixel cells (the pixels included in the LCD), the driving circuit comprising:

a coding unit ("*timing controller*") [par. (0027) lines 1-5], to generate a plurality of encoded data ("*digital gamma data*") according to a plurality of characteristic curves (gamma curves);

a reference voltage generator (a combination of "*gamma register 100*" and "*gamma reference voltage generator 200*") [fig. 2], to receive the encoded data ("*digital gamma data*") [par. (0027) lines 1-5], convert the encoded data from digital to analog [par. (0027) lines 5-9], and generate a plurality of reference voltages; and

a driving unit ("*10*") [fig. 1], to receive the reference voltages and accordingly drive the display cells;

wherein the plurality of characteristic curves are gamma curves respectively for three primary colors R, G, B [par. (0008)], and the coding unit generates the plurality of encoded data according to the gamma curves respectively for the three primary colors R, G, B at the same time [par. (0032) lines 1-5] (It is noted that digital gamma data for respective R, G, and B colors are obtained based on gamma curves for respective R, G, and B);

wherein the reference voltage generator (a combination of "*gamma register 100*" and "*gamma reference voltage generator 200*") [fig. 2] comprises: a plurality of sample/latch circuits (the plurality of storing means included in the "*gamma register 100*") [fig. 2], to receive the encoded data and apply the encoded data received to sample/latch processing for output; and a plurality of digital-to-analog converters (the plurality of D/A converters included in "*gamma reference voltage generator 200*") [fig. 3], each having a plurality of control signal lines [fig. 3], to perform digital to analog conversion according to the encoded data which is outputted by the sample/latch circuit and received by the control signal lines, thereby obtaining the reference voltages.

As to **claim 4**, Lee [fig. 2] teaches each digital-to-analog converter inputting the encoded data through the plurality of control signal lines.

As to **claim 7**, Lee teaches the driving unit being a data driver ("*data driver 10*") [fig. 1].

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee.

Lee does not expressly teach the reference voltage generator comprising a plurality of buffers.

However, Examiner takes official notice that it is well known in the art to use buffers to amplify signals.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the reference voltage generator of Lee to include a plurality of buffers, to use the buffers to enhance the output amplitude of the signals outputted from the D/A converters included in the reference voltage generator, and to output the enhanced output signals to the driving unit, in order to allow the reference voltage generator to reduce the amount of power required for the D/A converters to output signals sufficiently high enough to drive the pixels of the display, by amplifying the signals outputted from the D/A converters with the buffers.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action

is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SEOKYUN MOON whose telephone number is (571)272-5552. The examiner can normally be reached on Mon - Fri (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

May 21, 2008
/S. M./
Examiner, Art Unit 2629

/Sumati Lefkowitz/
Supervisory Patent Examiner, Art Unit 2629